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## Minimum duration of antibiotics based on blood culture in ruled out neonatal sepsis

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**Background & Objective:** In NICU, blood culture is monitored at least 48 hours before stopping antibiotic treatment in rule out sepsis. The objective of the study is to analyze the time to positive blood cultures for rule out sepsis to estimate minimum duration of antibiotics needed.

**Methods:** Retrospective observational study was performed in NICU at McMaster Children hospital (January 2004 to December 2013). Positive blood cultures identified with BacT/Alert<sup>®</sup> 3D microbial detection system were analyzed for all admitted newborns. Outcome parameter were microorganisms, hours from inoculation to positive blood culture, age at the time of culture taken. Time to positivity was evaluated for clinically important gram positive and gram negative bacteria and yeast.

**Results:** In 9254 babies, 7480 blood cultures were performed. 845 (11.3%) were positive for organisms. 815 (96%) were considered as significant organism causing disease in newborn (yeast, definite, possible pathogens) while 30 (4%) had contaminants. 54 (6.4%) blood cultures were positive in EOS (Early onset sepsis in <72 hours of age) while 791 (94%) were in LOS (late onset sepsis >72 hours of age). 613 (72.5%), 802 (95%) and 43 (5%) blood cultures turned positive by 24hr, 48hr and > 48hrs of incubation respectively. All gram-negative organisms in EOS and LOS were identified within 24 hours except one at 26 hours.

**Conclusion:** Probability of gram negative microorganisms growing beyond 24 hours is small. Initial antimicrobials treatment can be reduced after 24 hours to target only gram positive organism beyond 24 hours in LOS, while they may be stopped in EOS unless clinically indicated.

### Biography

Naveed Durrani did his Post-graduation in Pediatrics from Pakistan in 2004 and MRCP from Royal College of Physicians of Ireland in 2009. Currently, he is doing his fellowship in Neonatal-Perinatal Medicine at McMaster University, Canada. His interest is in neonatal sepsis and various quality improvement projects. He has more than 10 publications in an index medical journal.

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